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ACPD 7, S3253–S3254, 2007

> Interactive Comment

Interactive comment on "On the contribution of Aitken mode particles to cloud droplet populations at continental background areas – a parametric sensitivity study" *by* T. Anttila and V.-M. Kerminen

T. Anttila and V.-M. Kerminen

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Response to Referee #2

We thank the referee for his/her constructive comments. The remarks made are addressed below.

Minor comments:

Comment - In the "BASE"-scenario, a "jump" is found for the lowest updraft velocity. It might be a good idea to validate this by making calculations for intermediate values (0.2 - 0.4 m/s) of updraft velocities to see if this is really an artifact or an actual tendency. Nevertheless, the results of this test are not required to be added in the manuscript,



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only a short comment on it.

Author comment - We altered the discussion regarding the role of the mass accommodation coefficient in the "BASE" scenario. We give now the following interpretation for the "jump" which we have added after the sentence "Regarding the other varied parameters, it is worth noting that the mass accommodation coefficient contributes only marginally to the total model variance...":

"Additional calculations revealed that the mass accommodation coefficient contributes 6 and 3% to the total variation of the model output for V=0.25 and 0.3 m/s, respectively. The contribution of the mass accommodation coefficient thus reduces from 12 to 3% when V increases from 0.2 to 0.3 m/s, and such a drastic change is not intuitive in view of the fact that the relative contributions of other varied parameters display a coherent behavior. Moreover, the feature is not seen in the "MACRO" scenario (see below) even though the mass accommodation coefficient has the same value range (Table 1). We thus conclude that the PCEs consistently overestimate the role of the mass accommodation coefficient at updraft velocities <0.3 m/s."

Technical corrections:

Comment - Page 6087, line 26 and page 6088, line 5: 'Svenningsson' misspelled

Comment - Page 6096: a space missing between 10-4 and 'as'

Comment - page 6099 line 28, page 6100, line 5, page 6100, line 23, and page 6101, line 7: correct abbreviations of journals

Author comment - The manuscript has been updated according to these three comments.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 6077, 2007.

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